Claims

1. Control unit with a voltage source (15) and a reference resistor (Rref), which can be connected in the required manner in series with a sensor resistor (Rsens), the value of which is a function of its temperature, with the output voltage of the voltage source (15) dropping at the sensor resistor (Rsens) and the reference resistor (Rref) in the connected state, with the reference resistor (Rref) being dimensioned such that the maximum power loss of the sensor resistor (Rsens) is within the required value range of the sensor resistor (Rsens).

2. Control unit according to claim 1,
characterized in that
the voltage source (15) is configured to amplify its input voltage.

3. Control unit according to claim 2,
characterized in that
the voltage source (15) has a limiter for the output voltage.

4. Control unit according to claim 3,
characterized in that
the limiter is a Zener diode (D2).

5. Control unit according to one of the preceding claims,
characterized in that
the voltage source (15) comprises three transistors (Q1, Q2, Q3) with a common emitter, the base current of the first transistor (Q1) being a function of a control signal (CTRL), which can be applied to the control unit (1), the base of

the second transistor (Q2) is connected to the collector of the first transistor (Q1) and the base of the third transistor (Q3) is connected to the collector of the second transistor (Q2).

6. Control unit according to claim 5, characterized in that a low-pass filter (16) is disposed between the first and second transistors (Q1, Q2).

7. Control unit according to claim 6, characterized in that the low-pass filter (16) is formed
- by a capacitor (C3), which is connected to the collectors of the first and second transistors (Q1, Q2) and also to a voltage supply (4) of the voltage source (15),
- by a resistor (R2), which is connected both to the collector of the first transistor (Q1) and also to a voltage supply (4) of the voltage source (15) and
- by a further resistor (R1), which is connected both to the collector of the second transistor (Q2) and also to the voltage supply (4) of the voltage source (15).

8. Control unit according to one of the preceding claims, characterized in that the reference resistor (Rref) is connected both to the output (17) of the voltage source (15) and can also be connected to the sensor resistor (Rsens).

9. Control unit according to one of the preceding claims, which is configured such that it outputs a variable characterizing the voltage drop at the sensor resistor (Rsens) and the reference resistor (Rref) at a first output

(12) and that it outputs a variable characterizing the potential between the sensor resistor (Rsens) and the reference resistor (Rref) at a second output (13).

10. Control unit according to claim 9, with which a voltage divider is provided, to which the voltage drop at the sensor resistor (Rsens) and the reference resistor (Rref) is applied on the input side and which is connected to the first output (12) on the output side.

11. Control unit according to claim 10, with which a switch (19) is provided, which is used to control whether the voltage drop at the sensor resistor (Rsens) and the reference resistor (Rref) is applied to the voltage divider on the input side or a supply voltage (VCC) of an evaluation unit (3).

12. Control device comprising a control unit (1) according to one of the preceding claims and an evaluation unit (3) which is configured to generate a control signal (CTRL).

13. Control device according to claim 12, with which the evaluation unit (3) has a regulator, the regulated variable of which is the voltage drop at the sensor resistor (Rsens) and the reference resistor (Rref) and the actuating signal of which is the control signal (CTRL).